BRAGINSKIY, M.D., aspirant

Determining the weight of multistage spiral centrifugal pumps according to their basic operating parameters. Nauch. trudy Mosk. inst. radioelek. i gor. elektromekh. no.44:77-86 '62.
(MIRA 17:9)

BRAGINSKIY, M.G.

MARCHENKO, M.G., inzh.; BRAGINSKIY, M.G., inzh.

Development of coal preparation in the U.S.S.R. Ugol' 32 no.11:69-72 N '57. (MIRA 10:12)

(Coal preparation)

PAKHALOK, I.F., otv.red.; MARCHENKO, M.G., inzh., red.; ZVENIGORODSKIY, G.Z., inzh., red.; BRAGINSKIY, M.G., red.; REMESNIKOV, I.D., kand.tekhn.nauk, red.; RYKOV, N.A., red.izd-va; SABITOV, A., tekhn.red.

[Briquetting of coal] Voprosy briketirovaniia uglei. Moskva, Ugletekhizdat, 1958. 318 p. (MIRA 12:5)

1. Nauchno-tekhnicheskoye gornoye obshchestvo. TSentral'noye pravleniye, Moscow. 2. Vsesoyuznyy nauchno-issledovatel'skiy institut ugleobogashcheniya (for Zvenigorodskiy). 3. Institut goryuchikh iskopayemykh AN SSSR (for Remesnikov).
(Briquets (Fuel)) (Coal)

KUZNETSOV, K.K., inzh.; ERAGINSKIY, M.G., inzh.

In the Coordination Council of the All-Union Central Design and Planning Institute for Mine Construction in the Coal Industry dealing with the problems of coal preparation, briquetting and grading. Ugol' 36 no.6:60-61 Je '61. (MIRA 14:7)

(Coal preparation)

KUZNETSOV, K.K., inzh.; BRAGINSKIY, M.G., inzh.

In the Coordination Council of the All-Union Central Design and Planning Institute for Mine Construction in the Coal Industry. Ugol' 37 no.8:58-59 Ag '62. (MIRA 15:9)

1. Vsesoyuznyy tsentral'nyy gosudarstvennyy institut po proyektiorvaniyu i tekhniko-ekonomicheskim obosnovaniyam razvitiya ugol'noy promyshlennosti.
(Coal preparation)

BRAGINSKIY, M.G., inzh.

Expediency in the preparation coals for power engineering. Ugol' 39 no.11:50-55 N '64. (MIRA 18:2)

1. Vsesoyuznyy tsentral'nyy gosudarstvennyy institut po proyektirovaniyu i tekhniko-ekonomicheskim obosnovaniyam razvitiya ugol'noy promyshlennosti.

LOGVINENKO, I.P. (Kiyev); KOZIN, O.V. (Kiyev); BRAGINSKIY, M.I. (Kiyev)

"Track circuits" by N.F.Kotliarenko. Reviewed by I.P.Logvinenko, O.V.Kozin M.I.Braginskii. Zhel.dor.transp. 44 no.12:91-92 D '62. (MIRA 15:12)

1. Nachal'nik otdela signalizatsii tsentralizatsii, blokirovki i svyazi Kiyevgiprotransa (for Logvinenko). 2. Glavnyy inzh. sluzhby signalizatsii i svyazii Yugo-Zapadnoy dorogi (for Kozin). 3. Starshiy inzh. otdela signalizatsii, tsentralizatsii, blokirovki i svyazi Kiyevgiprotransa (for Braginskiy).

(Electric engineering) (Railroads—Signaling)
(Railroads—Communication systems)
(Kotliarenko, N.F.)

BRAGINSKIY, M.Z., inzh.

Devices for the positioning of stiff leather in the production process. Izv.vys.ucheb.zav.; tekh.leg.prom. no.1:113-126 '62.
(MIRA 15:2)

1. Ukrainskiy nauchno-issledovatel'skiy institut kozhevenno-obuvnoy promyshlennosti. Rekomendovana kafedroy mashin i apparatov Kiyevskogo tekhnologicheskogo instituta legkoy promyshlennosti.
(Leather)(Assembly-line methods)

BRAGINSKIY, O.B.

New efficient flotation reagent 1,1, 3-triethoxybutane. TSvet. met. 35 no.12:54-55 D '62. (MIRA 16:2)
(Flotation--Equipment and supplies)

ACCESSION NR: AP4039228 S/0064/64/000/005/0339/0344

AUTHORS: Fedorenko, N.P.; Braginskiy, O.B.; Fridman, L.A.; Shchukin, Ye.P.

TITLE: Economic efficiency of the pyrolysis of low octane gasolines

SOURCE: Khimicheskaya promy*shlennost', no. 5, 1964, 339-344

TOPIC TAGS: low octane gasoline, pyrolysis, high octane gasoline, aromatic hydrocarbon, naphthalene, naphthene, liquid pyrolysate, liquid hydrocarbon pyrolysis, production cost, petrochemical, chemical intermediate, hydrogenation, absorption oil, plasticizer

ABSTRACT: Work in various scientific institutes and experimental industrial laboratories had shown the low octane gasoline fraction to be the most valuable liquid petrochemical crude--in its chemical processing there are obtained a series of intermediates including divinyl and aromatic hydrocarbons in addition to ethylene and propylene. Various liquid hydrocarbons obtained in the production, stabilization and processing of petroleum (gaseous gasoline fractions, condensate, directly distilled gasoline, raffinates, products from cracking and subsequent dearomatization) had been evaluated to

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determine the material most suitable for pyrolysis. Processing of the liquid products from the pyrolysis of low octane gasolines yielded a predominant amount of high molecular olefinic and diolefinic hydrocarbons, about 30 weight% aromatics and about 20 weight % naphthenes. The products may be recovered by intensive processing of the pyrocondensates, or high octane gasoline products may be obtained by hydrogenation of the fraction boiling below 200C at low pressures (10-20 atm). At the NIISS (Scientific Research Institute of Synthetic Alcohols and Organic Products) calculations were made of the costs involved in processing the pyrocondensates to produce either the high octane gasoline or to obtain the aromatic hydrocarbons, resins and other products. For the latter the calculations were based on a complex scheme for most completely recovering all the pyrolysis resin components. Such a scheme, derived from various methods described in the Russian literature, involves the separation of the components in the six fractions: to 70C (mostly unsaturated C_5 hydrocarbons); 70-120C (high percent of aromatics, subjected to catalytic cracking at 3-5 atm., 400-450C, 0.5-0.75 sec^{-1} space velocity), 120-200C (unsaturated hydrocarbons for polymeric resins, to

ACCESSION NR: AP4039228

be polymerized with diisopropylbenzene peroxide), 200-230C (naphthalene, to be recovered by methods used in the coal tar chemical industry), 230-320C (to be subjected to high temperature hydrogenation; the 200-230C fraction to be used for naphthalene recovery, the higher boiling products, as absorbtion oils), and pitch (for resin plasticizers). The calculations confirmed the suitability, from the standpoint of the national economy, of using the liquid hydrocarbons in petrochemical processing. The expenses for the recovery, preparation and distillation of the additional petroleum required to obtain the directly distilled gasoline fraction for the complex pyrolysis process are rapidly recovered. Orig. art. has: 5 tables.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00

SUB CODE: FP NR REF SOV: 008 OTHER: 006

Card 3/3

MUKHINA, T.N.; BRAGINSKIY, O.B.; MAKAROV, O.V.; MAYOROV, V.I.

Effect of pressure on the pyrolysis of straight-run gasoline in a current of super-heated water vapor. Neftepер. i neftekhim. no.3:10-12 '65. (MIRA 18:5)

1. Nauchno-issledovatel'skiy institut sinteticheskikh spirtov.

BRAGINSKIY, O.B.

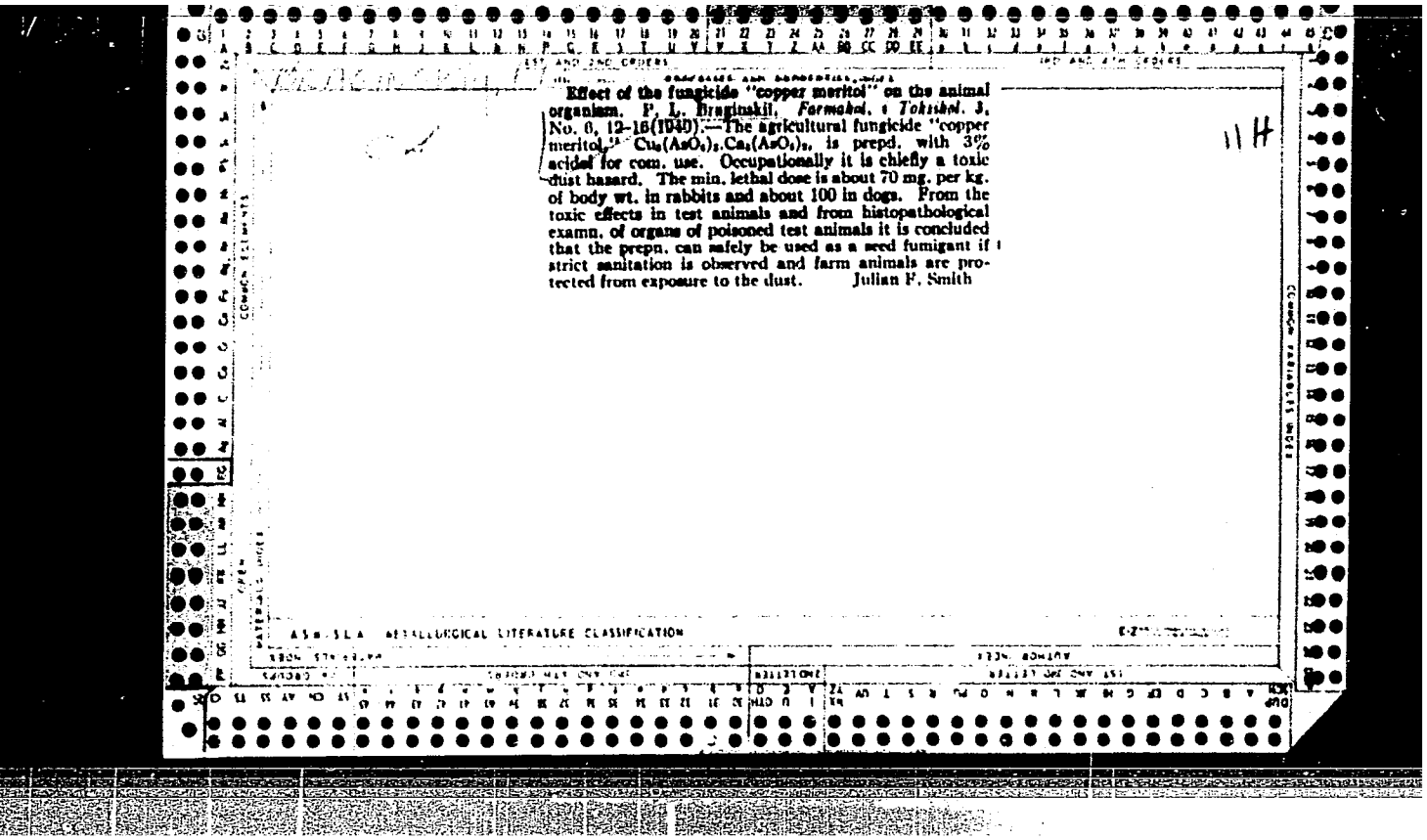
Separation of ethylene in capitalist countries. Khim.prom. 41 no.4:266-69 Ap '65.

(MIRA 18:8)

BRAGINSKIY, O.B.; MAKAROV, O.V.

Economics of straight-run gasoline pyrolysis under pressure in a pipestill. Neftepor. i neftekhim. no.7.37-39 '65.
(MIRA 18:12)

1. Nauchno-issledovatel'skiy institut sinteticheskikh spirtov i organicheskikh produktov.



Effect of the fungicide "copper meritol" on the animal organism. P. L. Braginskii. *Farmakol. i Toksikol.* 3, No. 6, 12–16(1940).—The agricultural fungicide "copper meritol," $Cu_3(AsO_4)_2.Ca_3(AsO_3)_2$, is prepd. with 3% acidol for com. use. Occupationally it is chiefly a toxic dust hazard. The min. lethal dose is about 70 mg. per kg. of body wt. in rabbits and about 100 in dogs. From the toxic effects in test animals and from histopathological examn. of organs of poisoned test animals it is concluded that the prepn. can safely be used as a seed fumigant if strict sanitation is observed and farm animals are protected from exposure to the dust. Julian F. Smith

11H

BRAGINSKIY, P. L.

PA 70T97

USSR/Medicine - Hygiene and Sanitation, May 1948
Industrial
Medicine - Mines and Miners

"Labor Conditions and Assanation Measures During the Extraction of Ozocerite," P. L. Braginskiy, Kiev Inst of Labor Hygiene and Occupational Diseases, 4½ pp

"Gig i San" Vol XIII, No 5

Ozocerite is mineral wax located in soft veins in sandy beds in the Borislava deposits. Hygienists are faced with the problem of proper removal of gases.

70T97

BRAGINSKIY, R. B.

MICROWAVES

"Mutual Synchronization of Reflex Klystrons Without Discontinuities in Amplitude and Frequency", By R.B. Braginskiy, S.D. Grozdover, A.S. Gorshkov, and I.T. Trofimenko, Radiotekhnika i Elektronika, No 8, August 1957, pp 1048-1052.

The purpose of this experimental investigation was to obtain a wide band of electronic frequency retuning. The authors have established the region of the values of fundamental parameters, in which klystrons operate in synchronism without discontinuities in amplitude and frequency of the generated oscillations. The resultant range over which electronic frequency detuning is possible is three times greater than obtained with a single klystron. Although the simultaneous operation of klystrons was already considered previously by Abdel Dayen (Synchronization of Reflex Oscillators, Zhurich, 1953), the mutual synchronization studied there was under identical transit angles, and the purpose of that investigation was an increase in the general output power in the center of the oscillation region. The problem of extending the range of electronic returning of the generated frequency was not touched upon there at all.

Card 1/1 - 40 -

BATYCHKO, S.V.; BRAGINSKIY, R.P. [Brehins'kyi, R.P.]; P'YANKOV, G.N. [P'iankov, H.N.]; YARMILKO, Ye.G. [IArmilko, O.H.]; KABAKCHI, A.M., doktor khim. nauk

Use of high-energy radiation for the improvement of the operational characteristics of polymeric materials. Khim. prom. no.4:3-6 O-D '64. (MIRA 18:3)

BRAGINSKIY, S.I.

TEW

3

Braginskiĭ, S. I. On the theory of motion of charged particles in a strong magnetic field. Ukrain. Mat. Ž. 8 (1956), no. 2, 119–126. (Russian)

Let a charged particle of mass m and charge e be moving in a strong magnetic field $\mathbf{H}$ under the influence of a relatively weak electric field $\mathbf{E}$. Let $\omega=eH/mc$, let the position vector of the particle be $\mathbf{r}$ and let the velocity be $\mathbf{v}$. Let $\omega=|\boldsymbol{\omega}|$. Let $v_\parallel$ and $v_\perp$ denote the scalar components of $\mathbf{v}$ which are respectively parallel to $\mathbf{H}$ and perpendicular to $\mathbf{H}$. The author derives approximate expressions for $d\mathbf{r}/dt$, $dv_\parallel/dt$, and $dv_\perp/dt$ by using an asymptotic expansion, valid for large values of ω, and neglecting terms involving powers of ω^{-1} higher than the first. This article may be viewed as a sequel to a previous article by Bogolyubov and Zubarev [same Ž. 7 (1955), 5–17; MR 17, 217], and employs certain equations thereof.

Certain simplifying approximations are needed for the applicability of the results obtained here. Let L be, roughly speaking, the smallest distance in which $\mathbf{E}$ and $\mathbf{H}$ change appreciably, and let t be the smallest time over which the magnetic field changes appreciably. Then we must assume: $v/L \ll \omega$, $E \ll (v_\perp)H$ (so that the particle can never come to rest), and $1/t \ll v/L$. Moreover, the

BRAGINSKII, S.I.

TFW

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mean velocity of the center of the Larmor circle must be small as well as the rate of change of the components of this mean velocity. Under the above assumptions the results include, among others:

(1) $dr/dt = v_{\parallel}\varepsilon_0 + (1/\omega)[F\varepsilon_0] - (v_{\parallel}^2/\omega)[(\varepsilon_0\nabla)\varepsilon_0, \varepsilon_0] - (v_{\perp}^2/2\omega)[(\nabla\omega/\omega), \varepsilon_0]$,

(2) $(d(v_{\parallel}^2 + v_{\perp}^2)/dt)/2 = F(dr/dt) + (v_{\perp}^2/2\omega)(\partial\omega/\partial t)$,

(3) $d(v_{\perp}^2/\omega)/dt = 0$,

where ∇ is the gradient operator, [ ] denotes cross-product of vectors, two vectors written side by side denotes inner product, and ε_0, ε_1, ε_2 is a variable orthonormal frame with $\varepsilon_0 \| H$. In (1), the first term on the right side represents the motion of the particle along a magnetic line of force, the second is a "drifting" across the magnetic field due to the component of E perpendicular to H, the third term represents a "centrifugal drifting" due to the curvature of the magnetic lines of force, while the last term is a "magnetic drift" due to the inhomogeneity of the magnetic field. *W. L. Baily.*

2/2

BRAGINSKIY, S. I.

56-2-21/47

AUTHOR: Braginskiy, S. I.,

TITLE: Transport Phenomena in a Completely Ionized Double Temperature Plasma (Yavleniya perenosa v polnost'yu ionizovannoy dvukhtemperaturnoy plazme)

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 2(8), pp. 459-472, (USSR)

ABSTRACT: The paper under consideration ascertains a system of transport equations for a plasma consisting of electrons and one kind of positive ions in the presence of an electric and a magnetic field. The transport equations: The present paper somewhat modifies the theory formulated by Chapman, S. and Gowling, T. G.(The Mathematical Theory of Non Uniform-Gases Cambridge, 1939), in order to obtain a system of transport equations for each componentof the plasma. Ions and electrons are in general supposed to have different temperatures. The plasma can be considered to consist of two liquids (electron liquid and ion liquid) which penetrate into each other. The system ofmacroscopic parameters of the gas is given. A method for the approximate solution of the kinetic equations: The distribution functions of the ions and electrons satisfy the system of kinetic equations. Because the electron has a much smaller mass than theion, these equations can be solved separately. The ion-electron collision integral can also be simplified. The solution of zero order is an arbitrary Maxwell distribution and an expression is given for

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Transport Phenomena in a Completely Ionized Double Temperature Plasma. 56-2-21/47

the first order correction term. The next chapter deals with the computation of the heat currents and the transmission of momentum. Finally the stress tensor is calculated and the expression found in this way is given explicitly. A mathematical appendix deals with the computation of the matrix elements. (There are two Slavic references and one table).

ASSOCIATION: AN of the USSR (Akademiya nauk SSSR)

SUBMITTED: February 13, 1957

AVAILABLE: Library of Congress

Card 2/2

BRAGINSKIY, S. I.

56-3-16/59

AUTHOR: Braginskiy, S.I.

TITLE: On the Behavior of a Completely Ionized Plasma in a Strong Magnetic Field. (O povedenii polnost'yu ionizovannoy plazmy v sil'nom magnitnom pole)

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 3, pp. 645-654 (USSR)

ABSTRACT: The character of the Movement of particles in a plasma varies in dependence on the impulse frequency $1/\tau$ and the rotation frequency ω. For the case $\omega\tau \gg 1$ and $\omega\tau \ll 1$ various kinetic equations are obtained which contain contradictions in themselves. An attempt is made to clear them up. The second, larger part of the work deals with the cylindrical plasma cord in which the plasma pressure forms a state of equilibrium with the electrodynamic amperage that exists along the cord. The following items are discussed:
Constriction of the plasma when a strong current flows through it.
1) fundamental equations
2) stationary regime
3) non-stationary regime.
There are 4 Slavic references.

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On the Behavior of a Completely Ionized Plasma in a Strong Magnetic Field. 56-3-16/59

ASSOCIATION: AN USSR (Akademiya nauk SSSR)

SUBMITTED: February 13, 1957.

AVAILABLE: Library of Congress

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BRAGINSKIY, S. I.

20-3-14/59

AUTHOR: Braginskiy, S.I.

TITLE: Types of the Vibrations of a Plasma in a Magnetic Field (O tipakh kolebaniy plazmy v magnitnom pole)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 115, Nr 3, pp. 475 - 478 (USSR)

ABSTRACT: The fundamental equations: It is useful to investigate these vibrations in the entire frequency range for any directions of propagation and wave lengths by means of the model of the two charged ideal gases (electron gas and ion gas). This makes possible a systematization of the various types of vibrations and the determination of new results. The author starts from the system of the linearized hydrodynamic equations for electrons and ions: $\rho_\alpha + \rho_\alpha^0 \operatorname{div} \vec{v}_\alpha = 0$; $\rho_\alpha^0 \dot{\vec{v}}_\alpha = e_\alpha n_\alpha^0 (\vec{E} + (1/c) [\vec{v}_\alpha \vec{H}_0]) - \nabla p_\alpha$. The index α signifies here the sort of the particles: $\alpha = e$ signifies electrons and $\alpha = i$ signifies ions. The undisturbed densities and concentrations as well as the external magnetic field are designated by the index zero. The oscillating quantities (the density ρ_α, the velocities $\vec{v}_\alpha$,

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Types of the Vibrations of a Plasma in a Magnetic Field

the pressures $\vec{p}_\alpha$ as well as the field intensities $\vec{E}$, $\vec{H}$) are assumed as small. The undisturbed plasma is neutral. The present paper considers the perturbation of the pressure as a scalar quantity. The equation of dispersion is obtained by equating with zero the determinant of the system of the here-resulting homogeneous equations.

The high frequencies: For the purpose of simplifying the calculations, the Larmor frequency of the electron is assumed to be small as compared to the Langmuir frequency. This applies in the case when the magnetic energy is not too much higher than the energy of the particles. Three of the 6 roots of the equation of dispersion have a higher order of magnitude than the other three. The equation of dispersion is explicitly written down. Then the expressions for ω^2 for long and for short waves are given. In the case of the short waves one root corresponds to the longitudinal plasma waves of the electrons, other roots correspond to the oscillations with right or left circular polarization respectively. As regards the long waves, the electrons either move along the magnetic lines of force or square with them. In the case of lower frequencies the oscillations are

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20-3-14/59

Types of the Vibrations of a Plasma in a Magnetic Field

quasineutral and they can be investigated with sufficient accuracy by neglecting the space charge and the displacement current. The dispersion equation is written down and its roots are specialized for long and short waves. There are 13 references, 7 of which are Slavic.

PRESENTED BY: M.A. Leontovich, Academician, January 18, 1957

SUBMITTED: December 20, 1956

AVAILABLE: Library of Congress

Card 3/3

BRAGINSKIY, S.I.

21(7) PHASE I BOOK EXPLOITATION SOV/1242

Akademiya nauk SSSR. Institut atomnoy energii

Fizika plazmy i problema upravlyayemkh termoyadernykh reaktsiy, t. II. (Plasma Physics and the Problem of Controlled Thermonuclear Reactions, t. 2) [Moscow] Izd-vo AN SSSR, 1958. 355 p. 3,000 copies printed.

Resp. Ed.: Leontovich, M.A., Academician.

PURPOSE: This collection contains previously unpublished work of members of the Institut atomnoy energii (Institute of Atomic Energy) of the Academy of Sciences of the USSR. It is intended for scientists interested in this field.

COVERAGE: This book is the second of four volumes of previously unpublished work of members of the Institute of Atomic Energy during the period 1951-58. The exploitation cards on the other volumes in this series have been released under the numbers 1241,1243, and 1244.

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BRAGINSKIY, S.I.

21(7) PHASE I BOOK EXPLOITATION SOV/1244

Akademiya nauk SSR. Institut atomnoy energii

Fizika plazmy i problema upravlyayemykh termoyadernykh reaktsiy, t. IV. (Plasma Physics and the Problem of Controlled Thermonuclear Reactions, v. 4) [Moscow] Izd-vo AN SSSR, 1958. 439 p. 3,000 copies printed.

Resp. Ed.: Leontovich, M.A., Academician.

PURPOSE: This collection contains previously unpublished work of members of the Institut atomnoy energii (Institute of Atomic Energy) of the Academy of Sciences of the USSR. It is intended for scientist interested in this field.

COVERAGE: This book is the last of four volumes of previously unpublished work of members of the Institute of Atomic Energy during the period of 1951-58. The exploitation cards on the other volumes in this series have been released under the numbers 1241, 1242, and 1243.

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Plasma Physics and the Problem (Cont.) SOV/1244

List of Previously Published Reports on Plasma Physics and Problems of Controlled Thermonuclear Reactions Made by Staff Members of the Institute of Atomic Energy of the Academy of Sciences of the USSR 436

AVAILABLE: Library of Congress (QC794.A38)

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Card 8/8

S.I. BRAGINSKIY (B.B. Kadomtsev)

"PLASMA STABILIZATION BY MEANS OF NON-UNIFORM MAGNETIC FIELDS"

by B. B. Kadomtsev, S. I. Braginskiy

Report presented at 2nd UN Atoms-for-Peace Conference, Geneva, 9-13 Sept 1958

BRAGINSKY, S.I.

BRAGINSKIY, S.I.

ANDRIANOV, A. M., BAZILEVSKAYA, O. A., BRAGINSKIY, S. I., BREZHNEV, B. G., PODGORNY, I. M., PROKHOROV, Y. G., FILIPPOV, N. V., FILIPPOVA, T. I. and KHRABROV, V. A.

"Experimental Investigation of High Current P-lse D'scharges."

paper to be presented at 2nd UN Intl. Conf. on the peaceful uses of Atomic Energy, Geneva, 1 - 13 Sept 58.

BRAGINSKIY, S. I. and SHAFRANOV, F. D.

"The Plasma Pinch with Heat Loss at the Electrodes," (work - 1953) pp. 3-19.

"The Physics of Plasmas; Problems of Controlled Themonuclear Reactions." Vol. II. 1958, published by Inst. Atomic Energy, Acad. Sci. USSR.
resp. ed. M. A. Leontovich, eidotorial work V. I. Kogan.

Available in Library.

BRAGINSKIY, S. I. and MIGDAL, A. B.

"The Processes in a Plasma Column with Rapid Increase of Current" (Work - 1951 and partially reworked in preparation for publication in 1956); pp. 20-25.

"The Physics of Plasmas; Problems of Controlled Thermonuclear Reactions." Vol. II. 1958, published by Inst. Atomic Energy, Acad. Sci. USSR.
resp. ed. M. A. Leontovich, editorial work V. I. Kogan.

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BRAGINSKIY, S. I. and SHAFRANOV, V. D.

"The Plasma Pinch in the Presence of a Longitudinal Magnetic Field." (Work - 1953); pp. 26-80.

"The Physics of Plasmas; Problems of Controlled Thermonuclear Reactions;" Vol. II. 1958, published by Inst. Atomic Energy, Acad. Sci. USSR.
resp. ed. M. A. Leontovich, editorial work V. I. Kogan.

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BRAGINSKIY, S. I. and KAZANTSEV, A. P.

"Magneto Hydrodynamic Waves in a Dilute Plasma," (Work carried out in 1958); pp. 24-31.

"The Physics of Plasmas; Problems of Controlled Thermonuclear Reactions." Vol. IV. 1958, published by Inst. Atomic Energy, Acad. Sci. USSR.
resp. ed. M. A. Leontovich, editorial work V. I. Kogan.

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BRAGINSKIY, S. I.

"Compression of a Plasma under the Action of its Own Magnetic Field." (Work -1951) pp. 115-121.

"The Flow of Particles and Heat Acroos a Strong Magnetic Field in a Completely Ionized Two-Temperature Plasma." (Work - 1952); pp. 178-185.

"Investigation of the Axial Region of a Plasma Pinch." (Work - 1952); pp. 229-233.

*

"The Physics of Plasmas; Problems of Controlled Thermonuclear Reactions." Vol. I. 1958, published by Inst. Atomic Energy, Acad. Sci. USSR. resp. ed. M. A. Leontovich, editorial work V.I. Kogan.*

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BRAGINSKIY, S. I. and BUDKER, G. I.

"The Physical Phenomena in the Process of the Ignition of a Dischearge for Incomplete Ionization." (Work - 1952); pp. 186-206.

"The Physics of Plasmas; Problems of Controlled Thermonuclear Reactions." Vol. I. 1958, published by Inst. Atomic Energy, Acad. Sci. USSR.
resp. ed. M. A. Leontovich, editorial work by V. I. Kogan.

Available in Library.

BRAGINSKIY, S. I., GEL'FAND, I. M. and FEDORENKO, R. P.

"The Theory of the Compression and Pulsation of a Plasma Column in a Strong Pulse Discharge," (Work carried out 1957-58); pp. 201-221.

"The Physics of Plasmas; Problems of Controlled Thermonuclear Reactions." Vol. IV. 1958, published by Inst. Atomic Energy, Acad. Sci. USSR.
resp. ed. M. A. Leontovich, editorial work V. I. Kogan.

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BRAGINSKIY, S. I. and KADOMTSEV, B. B.

"Stabilization of Plasma with the Help of Shielding Conductors." (Work carried out in 1957); pp. 300-326.

"The Physics of Plasmas; Problems of Controlled Thermonuclear Reactions." Vol. III. 1958, published by Inst. Atomic Energy, Acad. Sci. USSR, resp. ed. M. A. Leontovich, editorial work V. I. Kogan.

Available in Library.

AUTHOR: Braginskiy, S. I. SOV/56-34-6-23/51

TITLE: A Contribution to the Theory of the Spark Channel (K teorii razvitiya kanala iskry)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol. 34, Nr 6, pp. 1548-1557 (USSR)

ABSTRACT: This paper investigates the development of a spark channel for relatively high pressures and moderate amperage when the magnetic forces can be neglected. Some previous papers on this subject are mentioned. The author tries to find the concrete mechanism of the discharge and to build up a consistent theory of the widening of the channel with taking into account the electrical conductivity and the thermal conductivity of the gas in the channel. In the gas a relatively narrow electrically conducting channel with a high temperature and a high ionization is generated. Within this channel the Joule heat is released, and this phenomenon increases the pressure and widens the channel. The widened channel acts upon the remaining gas like a piston and generates a shock wave in this gas. In the region of this shock wave the temperature is by far higher than in the non-

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A Contribution to the Theory of the Spark Channel

disturbed gas. But the temperature in the channel itself is still by far higher than in the shock wave. The gas in the channel has a very low density and the overwhelming majority of the mass of the flowing gas is pressed out of the channel. Then an explanation is given for the generation of the narrow channel. The physical processes which determine the width of the channel and the limit of the current density are the removal of the heat from the channel and the expansion of the heated zone caused by the pressure. The following parts of this paper calculate and discuss in a rather detailed manner the principal equations of the problem, the transfer coefficients, the skin effect and the magnetic field, the external shell of the channel, the discontinuity of the ionization, the quasi-automodel solution, and a homogeneous model of a channel with a tight shell. At last the author discusses the limits of applicability of the theory built up in this paper. The author thanks M. A. Leontovich, V. I. Kogan, D. A. Frank-Kamenetskiy, and S. L. Mandel'shtam for useful discussions and also Z. D. Dobrokhotova and G. A. Mikhaylov for their help in the composition of the programs for the calculating machine and for the

A Contribution to the Theory of the Spark Channel

carrying out of the calculations.
There are 2 figures and 12 references, 10 of which are Soviet.

SUBMITTED: January 2, 1958

BRAGINSKIY, S. I.

21(0) PHASE I BOOK EXPLOITATION SOV/2081

International Conference on the Peaceful Uses of Atomic Energy, 2d., Geneva, 1958

Doklady sovetskikh uchenykh; yadernaya fizika (Reports of Soviet Scientists; Nuclear Physics) Moscow, Atomizdat, 1959. 552 p. (Series: Its: Trudy, Vol. 1) 8,000 copies printed.

Eds. (Title page): A.I. Alikhanov, Academician; V.I. Veksler, Academician; and N.A. Vlasov, Candidate of Physical and Mathematical Sciences; Ed. of this volume: S.I. Drozdov and B.P. Zaretskiy, Candidates of Physical and Mathematical Sciences; Ed. (Inside book): G.L. Smolyan; Tech. Ed.: Ye.I. Mazel'.

PURPOSE: This collection of articles is intended for scientific research workers and other persons interested in nuclear physics. The volume contains 43 papers presented by Soviet Scientists at the Second Conference on Peaceful Uses of Atomic Energy, held in Geneva in September 1958.

COVERAGE: It is divided into two parts. Part I contains 17 papers dealing with plasma physics and controlled thermonuclear Reactions, and Part II contains 26 papers on nuclear physics, including problems of particle acceleration and of cosmic ray physics. The first paper by L.A. Artsimovich presents a review of Soviet work on controlled thermonuclear reactions. The remaining papers in Part I deal with particular problems in this field.

papers in Part II deal in detail with various problems in nuclear physics, such as the fission of heavy atoms and their isotopes, and with the study of cosmic radiation by means of artificial earth satellites and rockets, described in a paper by S.N. Vernov. The Russian-language edition of the proceedings of the conference is published in 16 volumes. The first 6 volumes contain all the papers presented by Soviet scientists as follows: Volume (1), Yadernaya fizika (Nuclear Physics); Volume (2), Yadernyye reaktory i yadernaya energetika (Nuclear Reactor and Nuclear Power); Volume (3), Yadernoye goryucheye metally (Nuclear Fuel and Reactor Metals), Volume (4), Khimiya radioelementov i radiatsionnykh prevrashcheniy (Chemistry of Radioelements and of Radiation Transformations); Volume 5, Radiobiologiya i radiatsionnaya meditsina (Radiobiology and Radiation Medicine); Volume (6) Polucheniye i primeneniye izotopov (Production and Use of Isotopes). The other 10 volumes contain selected papers presented at the Conference by non-Soviet scientists. In the present volume discrepancies between the English and Russian language edition of the proceedings have been noted in three articles where the texts are not identical; Akhiyeser, et al, "High Current Pulsed Discharge"; Akhiyeser, et al, viz; Andrianov, et al, "High Frequency Plasma Oscillation"; and Bogolyubov, "Investigations of the Many-body Problem". The serial numbers of reports 2302 and 2504 are reversed in the English edition. Report 2211, by Mimalnikov, et al, is numbered 2536 in the English edition.

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BRAGINSKIY, S.I.

66702

24,2120 SOV/109-4-8-22/35

AUTHORS: Granovskiy, V.L., Luk'yanov, S.Yu., Spivak, G.V. and Sirotenko, I.G.

TITLE: Report on the Second All-Union Conference on Gas Electronics

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 8, pp 1339 - 1358 (USSR)

I.M. Podgornyy and N.G. Koval'skiy - "New Data on X-ray Radiation During Pulse Discharges".
V.A. Khrabrov and M.M. Sulkovskaya dealt with the investigation of the neutron radiation in powerful gas discharges in chambers with conducting walls.
N.A. Borzunov et al. - "Investigation of the Gas Discharge in a Conical Chamber".
S.M. Osovets et al. - "A Turn of Plasma in Transverse Magnetic Field".
I.G. Kesayev "Data on the Division of a Cathode Spot on Mercury in a Low-pressure Arc" (see p 1289 of the journal).
A.E. Robson (England) - "A New Theory of the Cathode Spot" (see p 1295 of the Journal).
L.N. Breusova - "Positive Column in a Hydrogen Discharge With Stationary and Pulse Loads".
I.G. Nekrashevich and A.A. Labud - "Current Distribution on the Surface of Electrodes in Electric Pulse Discharges".
L.S. Eyg. - "Some Properties of Gas Discharges in Low-voltage in Halogen Counters".

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G.I. Glotova and V.L. Granovskiy - "Comparison of the Initial De-ionisation in the Isotopes of Hydrogen (H and D)".
L.A. Akol'zina communicated some results on the pre-breakdown current pulses at low pressures.
M.Ya. Vasil'yeva and A.A. Zaytsev - "Charge-density oscillation Waves in Cylindrical Plasma".
L. Pekárek of Czechoslovakia communicated some information on the wave-like phenomena in gas-discharge plasma.
B.G. Brezhnev dealt with the problem of the determination of the energy of fast ions in pulse discharges.
B.B. Kadomtsev - "Convection Instability of a Plasma String".
S.I. Braginskiy and V.D. Shafranov - "Theory of a High-temperature Plasma String".
The fifth section was presided over by N.A. Kaptsov and dealt with high-frequency currents in gases. The following papers were read:
V.Ye. Golant - "Formation of Ultra-high Frequency Pulse Discharges in Inert Gases".

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G.I. Pateyuk - "Influence of the Boundary Conditions on the Formation and Maintenance of High-frequency Discharges".
P.S. Bulkin et al. - "Investigation of a Self-maintained Ultra-high Frequency Pulse Discharge and the Process of its Development".
G.M. Zastenker and G.S. Solntsev - "Some Results of the Investigation of the Formation of Low-pressure High-frequency Discharges".
G. Margenau (USA) - "Conductivity of Weakly Ionised Plasma".
A.A. Kuzovnikov - "The Conditions of Transition From High-frequency Corona Discharge at Atmospheric Pressures".
V.Ye. Golant - "The relationship Between the Characteristics of the Ultra-high Frequency Current and the Direct Current in Gas Discharges".
B.B. Lagov'yer analysed the conductivity of the disintegrating plasma in the window of a resonance discharge tube.
S.M. Levitskiy and I.P. Shashurin dealt with the applicability of the probe method to high-frequency discharges (see p 1238 of the journal).

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The paper by V. Ye. Mitsuk et al. was devoted to the investigation of the ultra-high frequency plasma by means of the Stark effect.
G.S. Solntsev et al. dealt with the problem of electric fields in a high-frequency discharge at low pressures.
Ye. Badareu of Rumania read a paper entitled "High-frequency Discharges in Methane".
The work of the sixth section was devoted to the problems of plasma and its radiation; the section was presided over by V.A. Fabrikant. The following papers were read:
Yu.M. Kagan - "New Techniques in the Probe Methods of Plasma Investigation".
V.I. Drozdov - "Oscillographic Measurements in Plasma".
V.A. Simonov and A.G. Mileshkin - "Investigation of the Movement of Plasma by Means of a Mass Spectrometer of the Transit Time".
A.V. P[illegible]chinskiy - "Appl[illegible]ation of the Oscill[illegible] [illegible] the Vapour [illegible]

31593
S/169/61/000/010/036/053
D228/D304

24.2120 (1141, 1532, 1538)

AUTHOR: Braginskiy, S. I.

TITLE: One criterion for the applicability of the hydromagnetic equation to the plasma

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 10, 1961, 12, abstract 10G65 (V sb. Vopr. magnitn. gidrodinamiki i dinamiki plazmy, Riga, AN LatvSSR, 1959, 67-71, diskus., 71-72)

TEXT: The conditions of realizing the "adherence" principle used in magnetic hydrodynamics, i.e., the zero parity of an electric field in a system of coordinates moving together with the plasma, are derived from the general Ohm's law for low-frequency movements of a two-component plasma. Such conditions are

$$\Pi = \frac{4\pi e^2 nL}{Mc^2} \gg 1 \quad ,$$

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One criterion for...

where M is the mass of the ion, n is the concentration, and L is the characteristic size of the problem and the requirement necessary for the magnetic energy to exceed the heat energy of the gas. These conditions also warrant smallness of the Larmov radius of ions in comparison with the characteristic size of L. Furthermore, under the condition $\Pi \gg 1$, the velocities of the electron and ion components are close, and the condition of quasineutrality is fulfilled. Magnetic hydrodynamics serve as a good approximation when $\Pi \gg 1$ and when the free run of particles is small and gives qualitatively correct results even in the case of rare collisions (when the free run is large), whereas, when $\Pi < 1$, the results of magnetic hydrodynamics are unsuitable. In the discussion, R. V. Polovin proposed the approximate derivation of hydromagnetic equations from quasi-hydrodynamic equations for a two-component plasma in the case of low-frequency movements. [Abstracter's note: Complete translation.]

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BRAGINSKIY, S.I.

PHASE I BOOK EXPLOITATION SOV/3762

Konferentsiya po magnitnoy gidrodinamike. Riga, 1958.

Voprosy magnitnoy gidrodinamiki i dinamiki plazmy; trudy Konferentsii. (Problems in Magnetohydrodynamics and Plasma Dynamics; Transactions of a Conference) Riga, Izd-vo AN Latviyskoy SSR, 1959. 343 p. Errata slip inserted. 1,000 copies printed.

Sponsoring Agency: Akademiya nauk Latviyskoy SSR. Institut fiziki.

Editorial Board: D.A. Frank-Kamenetskiy, Doctor of Physics and Mathematics, Professor; A.I. Vol'dek, Doctor of Technical Sciences, Professor; I.M. Kirko, Doctor of Physics and Mathematics; V.Ya. Veldre, Candidate of Physics and Mathematics; V.G. Vitol, Candidate of Physics and Mathematics; Yu.M. Kruzin'; and V.Ya. Kravchenko.

Ed.: A. Teytel'baum; Tech. Ed.: A. Klyavinya

PURPOSE: This book is intended for physicists working in the field of magnetohydrodynamics and plasma dynamics.

COVERAGE: This volume contains the transactions of a conference held in Riga, June 1958, on problems in applied and theoretical magnetohydrodynamics. The objects of the conference were the investigation of the basic trends in theoretical and applied magnetohydrodynamics, establishing contact between the people doing research in different branches of magnetohydrodynamics, and promoting the participation of theoretical physicists in problems in applied magnetohydrodynamics. More than 160 persons from different parts of the Soviet Union took part in the conference, and 55 papers were read. Similar conferences are to be held regularly in the future; the next such conference is scheduled to be held in Riga in June 1960. In this present collection of the transactions of the conference, most of the papers and comments on papers are presented by the authors themselves in an abridged form. The book is divided into two parts: the first part deals with problems in theoretical magnetohydrodynamics and plasma dynamics, and consists of 35 articles on such aspects of the problem as the application of magnetohydrodynamics in astrophysics (D.A. Frank-Kamenetskiy), magnetohydrodynamics and the investigation of cosmic-ray variations (L.I. Dorman), acceleration of plasma in a magnetic field (G.V. Gordeyev and A.I. Gubanov), stability of shock waves and magnetohydrodynamics (A.I. Akhiyezer). The second part, consisting of 33 articles, deals with problems of experimental magnetohydrodynamics, including the application of physical simulation for investigation of electromagnetic processes in liquid metals (I.M. Kirko) and the development of electromagnetic pumps (P.G. Kirillov), at the Institute of Physics of the Academy of Sciences, Latvian SSR. Several articles are devoted to induction pumps, electromagnetic crucibles, electromagnetic stirrers for molten metals, and their application in the metallurgical industry including schematic diagrams of their power-supply systems. References are given at the end of most of the articles.

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ACCESSION NR: AR4014755 S/0058/63/000/012/G019/G019

SOURCE: RZh. Fizika, Abs. 12G136

AUTHOR: Braginskiy, S. I.

TITLE: Transport phenomena in plasma

CITED SOURCE: Sb. Vopr. teorii plazmy*. Vy*p. 1. M., Gosatomizdat, 1963, 183-272

TOPIC TAGS: plasma, transport phenomena, transport phenomena in plasma, kinetic equation, transport equation, plasmay hydrodynamics, plasma magnetohydrodynamics, plasma pinch

TRANSLATION: A kinetic theory is developed for transport phenomena in a plasma and the principles of the hydrodynamic description of a plasma are considered. Principal attention is paid to a simple plasma consisting of electrons and one species of ions; a plasma of

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ACCESSION NR: AR4014755

more complicated composition is considered in less detail. The transport coefficient is derived from the kinetic equations for a simple plasma. A summary of the results and a qualitative analysis of the transport coefficients are presented apart from the derivation. Among the examples considered are magnetohydrodynamic waves in a plasma and some simpler relations for a straight pinch.

DATE ACQ: 24Jan64 SUB CODE: PH ENCL: 00

Card 2/2

BRAGINSKIY, S.I.

Structure of the F-layer and the causes of convection in the earth's core. Dokl. AN SSSR 149 no.6:1311-1314 Ap '63. (MIRA 16:7)

1. Predstavleno akademikom M.A.Leontovichem.
(Geophysics)

L 9280-65 ENT(l)/ENP(m)/EPA(sp)-2/ENG(v)/EPR/EPA(w)-2/T-2/EWA(m)-2 Pd-4/
Pab-24/Pe-5/Pe-4/Pi-4 IJP(c)/ASD(f)-2/AEDC(a)/RAEM(c)/PSD/APWL/APETR/SSD/ESD(t)/
ASD(p)-3/ESD(ga) WW/GM
ACCESSION NR: AP4046288 S/0203/64/004/005/0898/0916

AUTHOR: Braginskiy, S.I.

TITLE: Magnetohydrodynamics of the earth's core

SOURCE: Geomagnetizm i aeronomiya, v. 4, no. 5, 1964, 898-916

TOPIC TAGS: earth core, geophysics, magnetohydrodynamics, hydromagnetics, core convection, core turbulence, core crystallization

ABSTRACT: The author has made a qualitative study of problems involved in the mechanism of convection in the earth's core on the basis of the hypothesis that the cause of this convection is the upward movement of a light admixture, forming during the crystallization of the inner core. Convection equations have been derived for a two-component liquid for the conditions prevailing in the earth's core, taking into account the release of the heat of diffusion. The author has also investigated the stability of a plane layer of a two-component liquid in a gravity field in the presence of a magnetic field and rotation. A qualitative study has been made of the mechanism of turbulence in the earth's core. This paper represents a continuation of the author's previous studies of a kinetic theory of the earth's hydromagnetic dynamo (Zh. eksperim. i teor. fiziki,

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L 9980-65

ACCESSION NR: AP4046288

1964, No. 9, No. 12; Geomagn. i aeronomiya, 1964, 4, No. 4, 732). This latest paper emphasizes the "engine" (convection mechanism). It is shown that the forces in the earth's core associated with convection are many orders of magnitude less than the static forces. For example, a change in static pressure of $2 \cdot 10^6$ atm and a magnetic field in the core of $B \sim 10^3$ gauss gives $B^2/8\pi \sim 10^{-1}$ atm. The corresponding Archimedean force $\rho_1 g \sim \nabla B^2/8\pi$ is obtained when $\rho_1/\rho \sim 10^{-7.5}$, where ρ_1 is the density deviation from its statistically equilibrium value, and g is the acceleration of gravity. This makes it possible to convert from the initial hydrodynamic equations to the convection equations. Although convection equations have been derived by many authors, they have neglected either the nonlinearity of the convection or the nonhomogeneity of the static state. However, in the earth's core, this nonhomogeneity exceeds by many orders of magnitude the deviations associated with convection. Therefore, the derivation of such equations must be changed, and the author accomplishes this in section 2 of the paper. In section 3, there is a qualitative study of the earth's hydromagnetic dynamo and its principal parameters are evaluated. Qualitatively, the author adheres to the ideas of Elsasser and Bullard, but the quantitative difference

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ACCESSION NR: AP4046288

requires the introduction of a new idea concerning the thermal nature of convection in the core. The dynamo mechanism is related to the largest scale motion and is related to quasi-stationary values — velocity, the magnetic field, etc. The behavior of small perturbations of these values, that is, stability, is considered in section 4, using a very schematic plane model. The conditions of convective instability of a plane layer of a conducting liquid, with a magnetic field and rotation taken into account, are obviously satisfied in the earth's core. However, it is important to know exactly what types of disturbances develop in order to understand at least character of turbulent convection developing in the core, which is superposed on the motion of the principal scale. This problem is discussed briefly in section 5. "The author thanks M. A. Leontovich for discussions". Orig. art. has: 118 formulas.

ASSOCIATION: none

SUBMITTED: 10Apr64 ENCL: 00 SUB CODE: ES, ME

NO REF SOV: 023 OTHER: 029

Card 3/3

BRAGINSKIY, S.I.

Self-excitation of a magnetic field during the motion of a highly conductive fluid. Zhur. eksp. i teor. fiz. 47 no.3:1084-1098 S '64. (MIRA 17:11)

L 10918-65 EWT(1)/EWP(m)/EPA(s)-2/EWT(m)/EPA(sp)-2/EPF(n)-2/EWG(v)/EPR/EPA(w)-2/T-2/EWP(t)/EPA(bb)-2/EWP(b)/EWA(m)-2 Pd-1/Pab-10/Pe-5/Ps-4/Pt-10/Pi-4/Pu-4 IJP(c)/AFWL/ASD(p)-3/AFETR/SSD/AEDC(b)/AEDC(a)/RAEM(a)/RSD/ASD(f)-2/RAEM(c)/ESD(gs)/ESD(t)/SSD(b)
ACCESSION NR: AP4046429 JD/WW/JG S/0056/64/047/003/1084/1098

AUTHOR: Braginskiy, S. I.

TITLE: On the self excitation of a magnetic field during the motion of a highly conducting fluid

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 3, 1964, 1084-1098

TOPIC TAGS: magnetohydrodynamics, magnetogasdynamics, plasma magnetic field, Reynolds number, surface boundary layer

ABSTRACT: In view of the mathematical difficulties involved in the problem of the analysis of the self-excitation of a magnetic field in a conducting liquid (hydromagnetic dynamo), which calls for the solution of three dimensional problems, the author generalizes the Cowling theorem (Month. Not. Roy. Astr. Soc. v. 94, 39, 1934), which states that an axially-symmetrical stationary hydromagnetic dynamo

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is impossible, to include a nonstationary case with very large magnetic Reynolds number (such as would obtain in the liquid core of the earth and is frequently encountered in astrophysics). In this case the magnetic field can be maintained by a very weak generation mechanism, such as would arise in the case of small deviations from axial symmetry. In the case of high conductivity such a deviation results in a self-excitation term proportional to the azimuthal field in the equation for the meridional-field vector potential. An expression is derived for the corresponding proportionality coefficient (called the generation coefficient) in terms of the azimuthally-dependent velocity components. The behavior of the field near surfaces where the tangential velocity experiences a discontinuity, is also considered. Near such surfaces there are produced thin transition layers in which the generation coefficient increases strongly, and a phenomenon defined as "concentrated generation" is produced. An analogous phenomenon can occur also in layers near surfaces where the azimuthal velocity vanishes. Both types of

L 10918-65
ACCESSION NR: AP4046429

layers are considered and expressions for the corresponding concentrated generation in them are obtained. Surface layers produced on the outer boundary of the liquid conductor, in which self-excitation of the field occurs, are also considered. "I thank M. A. Leontovich for a discussion." Orig. art. has: 1 figure and 79 formulas.

ASSOCIATION: None

SUBMITTED: 08Apr64 ENCL: 00

SUB CODE: ME NR REF SOV: 000 OTHER: 010

Card 3/3

L 22160-65 EPA(s)-2/EWT(m)/EPA(bt)-2/EWP(t)/EWP(t) Pt-10 BSD/SSD/AFWL/AEDC(a)/ASDF-3/ASD-3/AFETR/RAEMA/RAEM(c)/ESD(s)/ESDT JD

ACCESSION NR: AP5001841 S/0056/64/047/006/2178/2193

AUTHOR: Braginskiy, S. I.

TITLE: Theory of the hydromagnetic dynamo

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 6, 1964, 2178-2193

TOPIC TAGS: hydromagnetic equation, hydromagnetic dynamo, geophysical magnetic field, astrophysical magnetic field, magnetohydrodynamics

ABSTRACT: The paper is a continuation of earlier work by the author (ZhETF v. 47, 1084, 1964) and deals with the kinematic theory of the hydrodynamic dynamo, which considers the generation of a magnetic field by a moving conducting liquid, and which is of interest in connection with astrophysical and geophysical magnetic fields, and in magnetohydrodynamics in general. The generation equations are generalized to include the nonstationary case and are solved for a simple model of a hydromagnetic dynamo in the form of an infinite plane liquid layer. A simple example of motion in a plane liquid layer is also considered, when the generation equations can be readily integrated. A hypothesis is advanced on the

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L 22180-65
ACCESSION NR: AP5001841

possibility of self-stabilization of a tangential discontinuity in a highly conducting liquid as a consequence of the dynamo effect. The generation equations are used to investigate the hydromagnetic dynamo of the earth. Some applications of the theory are indicated. "I thank A. Ye. Bazhanov for help in the numerical calculations and M. A. Leontovich for a discussion." Orig. art. has: 79 formulas.

ASSOCIATION: None

SUBMITTED: 04Jun64 ENCL: 00

SUB CODE: ME,ES NR REF SOV: 003 OTHER: 003

Card 2/2

BRAGINSKIY, V.;POPOV, S.

Revealing and using hidden potentials. NTO no.12:26-27 D '59
(MIRA 13:3)

1. Predsedatel' soveta pervichnoy organizatsii Nauchno-tekhnicheskogo obshchestva sakharo-rafinadnogo zavoda, g. Odessa (for Braginskiy).
2. Predsedatel' zavkoma profsoyuza Odesskogo sakharo-farinadnogo zavoda (for Popov).
(Odessa--Sugar industry)

SOV/20-123-4-15/53

24(3), 9(3)

AUTHORS: Bobrinov, V. , Braginskiy, V.

TITLE: The Radiation From a Point Charge Uniformly Moving Along the Axis of a Round Hole in an Infinite Ideally Conducting Plane (Izlucheniye tochechnogo zaryada, ravnomerno dvizhushchegosya po osi kruglogo otverstiya v bezkonechnoy ideal'no provodyashchey ploskosti)

PERIODICAL: Doklady Akademii nauk SSSR, 1950, Vol 123, Nr 4, pp 634-636 (USSR)

ABSTRACT: The authors investigated the radiation of a point charge e_0 uniformly moving with velocity v along the axis of a circular hole with the radius r_0 in an infinite ideally conducting plane. $v/c \ll 1$ is assumed, where c denotes the velocity of light. The ideally conducting plane with the hole is assumed to be located in the plane $z = 0$, and the solution for $z > 0$ is sought for reasons of certainty. In order to determine the field strength $\vec{E}$ in the wave zone, it is necessary to solve an inhomogeneous wave equation with inhomogeneous boundary conditions. $\vec{E}$ may be set up in the form $\vec{E} = \vec{E}_1 + \vec{E}_2$, where $\vec{E}_1$ denotes the solution of the in-

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homogeneous equation with homogeneous boundary conditions, and $\vec{E}_2$ - the solution of the homogeneous equation with inhomogeneous boundary conditions. The first part of the problem is reduced to determining the radiation field of the point charge e_0 occurring in the plane z = 0 and moving along the z axis with constant velocity. This is the so-called "transition radiation" during transition of the charge from the metal into the vacuum. The solution of the first part of this problem is explicitly written down. For the solution of the second part of the problem it is necessary to determine the radiation field from the known distribution of the tangential components of the field on the plane z = 0. Solving of this mixed boundary value problem is rather complicated. The problem investigated here can be reduced to the first boundary value problem. For time-harmonic fields its solution has the form

$$\vec{E}_2(M) = \int_S E''(M,P,\vec{A}^1)dS.$$

Card 2/4 Here $\vec{E}_2(M)$ denotes the field strength at point M; $\vec{E}''(M,P,\vec{A}^1)$ -

The Radiation of Point Charge Uniformly Moving Along the Axis of a Round Hole in an Infinite Ideally Conducting Plane

SOV/20-123-4-15/53

field strength produced at point M by a punctiform magnetic dipole with the force $\vec{A}^1 = (1/4\pi)\,[\vec{E}\,\vec{n}]$. This dipole is assumed to be at point P on the ideally conductive surface S. In the here investigated case the expression under the integral sign is different only for the aperture of zero. The further course taken by calculations is outlined in short. The radiation of the aperture and of the charge do not depend upon the direction of charge motion. The presence of a hole weakens the dipole-like part of the transition radiation, especially the higher frequencies. The existence of a hole in the screen restricts the radiation spectrum on the side of high frequencies and thereby the total energy radiated becomes finite. The authors then give a formula and a diagram for the ratio between the spectral density of the energy radiated in one half of the space and the spectral energy of transition radiation. There are 2 figures and 3 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

Card 3/4

BRAGINSKIY, V.

PA 164T88

USSR/Radio - Magnetic Recorders
Vacuum Tubes

Jul 50

"AVC at Audio Frequency," V. Braginskiy

"Radio" No 7, pp 55-57

Describes AVC circuit designed by Experimental Plant of Committee for Radio Info and used in its Type MDS-1 magnetic recorder for stenographic use. Recommends use of 6K7 variable mu tube or tubes with two control grids (6L7, 6SA7). Latter is preferable because little negative voltage is needed. 6L7 (6A5B) tubes are used in plant's model.

[redacted]

164T88

PA 195T99

BRAGINSKIY, V.

USSR/Radio - Magnetic Recorders Sep 51

"A Classification of Magnetic Recorders," V. Braginskiy

"Radio" No 9, p 39

Gives technical characteristics and uses of magnetic recording and reproducing devices as classified into the following groups: (1) professional-type device (recording and reproducing of radio broadcasts), (2) professional-type device with synchronized recording (for motion pictures), (3) general-use recorders for individuals and groups, and (4) dictaphones and other special types not included in the 1st 3 groups.

195T99

BRAGINSKIY, V.

USSR/Electronics - Magnetic Recording Oct 51

"Frequency Distortion in Magnetic Recording," V. Braginskiy

"Radio" No 10, pp 48-52

Discusses the reasons for frequency distortion in magnetic recording. Gives methods for improving the frequency response and methods for recording the response.

208T17

BRAGINSKIY, V.

USSR/Radio - Magnetic Recording Literature

Dec 51

"Concerning Literature on Sound-Recording," V. Braginskiy

"Radio" No 12, pp 57, 58

Briefly describes the 8 books published in this field in the period 1949 - 1951. Of these, 6 were published by Gosenergoizdat, one by the Dosarm Publishing House, and one by Goskinoizdat. Details the faults in these books, particularly the lack of evaluations of the individual designs, and recommends that Svyaz'izdat undertake the publication of books in this field.

208T102

BRAGINSKIY, V.A.

Technical supervision inthe exploitation of technological equipment
Stan i instr., 23,no.6, 1952

BRAGINSKIY, V. A.

28-5-21/30

AUTHOR: Braginskiy, V.A., Engineer

TITLE: Tolerances for Parts Made of Plastics (Dopuski na detali iz plastmass)

PERIODICAL: Standartizatsiya, 1957, # 5, p 79-81 (USSR)

ABSTRACT: The article gives general information on tolerances for parts produced from plastics, as used in Germany, the US and as suggested in Soviet literature.

The tolerance norms of 1947, worked out by the "Glavkhim-plast" of the Ministry of Chemical Industry were roughly the same as in the German DIN 7710 for 1st grade accuracy.

There is no general opinion concerning permissible deviations of tolerances as well as orientation of tolerances (symmetrical or non-symmetrical). In the author's opinion, a practical solution of the problem has to be found, the most economical degree of accuracy has to be determined.

There are 1 diagram and 4 references, all of which are Russian.

AVAILABLE: Library of Congress

Card 1/1

Braginskiy, V.A

AUTHOR: Braginskiy, V.A. 115-5-42/44

TITLE: Once More on the Statistical Inspection Method(Yeshche raz o statisticheskom metode kontrolya)

PERIODICAL: "Izmeritel'naya Tekhnika", No 5, Sep-Oct 1957, pp 94-95 (USSR)

ABSTRACT: The necessity of the statistical method in industry is discussed. Although the theoretical basis of the method is worked out, it is not extensively used in practice, and a number of industrial enterprises have dropped it. Organizational measures are suggested to have the method accepted by the technicians. Statistical inspection devices of B.S. Bayburov's design are mentioned, which proved to be unsuitable for practical work. Statement is made that in many foreign countries standards exist for statistical inspection.

AVAILABLE: Library of Congress

Card 1/1

AUTHOR: Braginskiy, ~~V.A.,~~ Engineer SOV/122-58-5-21/26

TITLE: Investigation of the Precision of Plastic Components by Statistical Methods (Issledovaniye tochnosti detaley iz plasticheskikh mass statisticheskimi metodami)

PERIODICAL: Vestnik Mashinostroyeniya, 1958, Nr 5, pp 75 - 79 (USSR)

ABSTRACT: A statistical investigation is reported concerned with the true distribution of dimensional accuracy in the moulding of phenolic plastic components. Statistical quality control charts were compiled during a production run and histograms were prepared from the charts showing the distribution of size deviations over the complete sample. It was concluded that the type of material does not affect the size deviation histogram, nor does the type of press equipment. The main factors which affect dimensional accuracy are the dosage of raw material and the time cycle of the production process. The nature and numerical values of these effects, separately for the pre-heating and pressing times in relation to dimensions both in the direction of pressing and transversely to this direction are given in Table 2.

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SOV/58-5-21/26

Investigation of the Precision of Plastic Components by Statistical Methods

There are 7 figures, 2 tables and 3 Soviet references.

1. Plastics--Production 2. Plastics--Quality control
Card 2/2 3. Industrial production--Statistical analysis

SOV/117-58-11-36/36

AUTHORS: Glikin, N.M., Braginskiy, V.A., Engineers

TITLE: Reviews (Retsenzii)

PERIODICAL: Mashinostroitel', 1958, Nr 11, pp 47 - 48 (USSR)

ABSTRACT: Two Soviet books on machine-building are reviewed.

1. Machines--Production 2. Literature

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PHASE I BOOK EXPLOITATION SOV/4009

Braginskiy, Vladimir Abramovich, Engineer

Analiz kachestva proizvodstva detaley iz plastmass s pomoshch'yu matematicheskoy statistiki (Production Analysis of Plastic Parts Using Mathematical Statistics) Leningrad, 1959. 26 p. (Series: Leningradskiy dom nauchno-tekhnicheskoy propagandy. Obmen peredovym opytom. Seriya: Kontrol' kachestva produktsii, vyp. 7/8) 6,500 copies printed.

Sponsoring Agencies: Leningradskiy dom nauchno-tekhnicheskoy propagandy; Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy RSFSR.

Ed.: S.T. Tyumeneva, Engineer; Tech. Ed.: T.A. Yelagina.

PURPOSE: This booklet is intended for processing engineers and designers working in the production of plastic parts.

COVERAGE: The booklet gives simple methods of mathematical statistics which the author considers highly important in solving a number of practical problems. The examples cited are taken from production methods applied in analyzing the

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degree of precision of plastic part dimensions in certain Leningrad factories. No personalities are mentioned. There are 5 references, all Soviet.

TABLE OF CONTENTS:

There is no table of contents; the booklet is divided into the following sections:

AVAILABLE: Library of Congress

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AC/wbc/mas
7-26-60

28(3); 15(8)

SOV/28-59-4-13/19

AUTHOR: Braginskiy, V.A., Engineer

TITLE: The Regulation of Tolerances for Parts Made of Plastic.(Reglamentatsiya dopuskov detaley iz plastmass)

PERIODICAL: Standartizatsiya, 1959, Nr 4, pp 29-31 (USSR)

ABSTRACT: The author comments on and criticizes the German DIN standard draft of 1957 for plastic part tolerances, stating that Soviet industry can obtain closer tolerances. He stresses the necessity to standardize the dimension tolerances for plastic parts in the USSR. There are 5 diagrams and 3 references, 1 of which is Soviet and 2 German.

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GOSTEV, V.N.; BRAGINSKIY, V.A.; FYN SI-YUN [Fêng Hsi-yung]

Experimental checking of the possibility of extending tolerances. (MIRA 14:3)
Trudy LTI no.50:177-186 '59.
(Tolerance(Engineering))

S/122/60/000/001/018/018
A161/A130

AUTHOR: Braginskiy, V. A., Engineer

TITLE: Conference on the problems of interchangeability and accuracy of parts made from plastics

PERIODICAL: Vestnik mashinostroyeniya, no. 1, 1960, 84-85

TEXT: Information on the first conference on plastics for machine parts, convened in 1959 in Leningrad is given. About 200 specialists from Moscow, Leningrad, Kiev, Riga, Orekhovo-Zuyevo and other places participated. The conference stated that considerable experience has been gained by the Soviet plastic industry, i.e., by the "VEF" Plant (Riga), "Karbolit" (Orekhovo-Zuyevo) Plant, "Soyuz" Plant and Plant imeni "Komsomol'skoy Pravdy" (Leningrad), and others, in mass production of parts from plastics. The "Soyuz" Plant has developed a special calculation system for threaded connections in plastics making parts interchangeable. But such work is rare in the industry. Organizatory ways and methods of coordination of the experience were indicated in the reports. The main obstacle in the development at the time being is low quality of raw material having too different properties. The necessity of improvement was

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Conference on the problems ...

stressed, and the leading institutes in the branch (the Moscow and the Leningrad institutes) the "Karbolit" Plant, the Okhtinskiy khimicheskiy kombinat (Okhta Chemical Combine) and other works must take care of the most part of the work. The absence of standard scientifically grounded accuracy norms for plastics was mentioned as an obstacle for progress, this concerns the tolerances in the first place. The initiative of separate Chairs of MVTU im. Baumana and LTI im. Lensoveta in this sense was appreciated, they have started such work. The attention was drawn to the necessity of taking into account the specific properties of plastics in designing machines, and the application of the existing measuring tools for plastics was discussed. The conference decisions marked the trends of work for the future. This includes studies of the basic factors affecting accuracy; standardization of production processes; calculation of press molds dimensions; application of new plastics permitting the manufacturing of accurate parts; application of methods and means for determination of the accuracy and quality of parts, using existing mass production methods, e. g., mathematical statistics. The decided trends are: 1) Development of work on standardization of the raw materials used for plastic parts, with corresponding regulation of the physical and technical properties. 2) Development of accuracy standards for the fundamental production equipment; standards for the dimensions of

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plastic parts produced by different methods and from different plastics, for thread elements on plastics, gears and transmissions. It was stated necessary that the GNTK Soveta Ministrov SSSR (GNTK of the Council of Ministers of the USSR) takes over the coordination and planning in this field.

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S/028/60/000/03/023/029
D041/D006

30(7)
25(6)

AUTHORS: Braginskiy, V.A., and Gostev, V.N.

TITLE: A Conference on Problems of Accuracy in Machine Building

PERIODICAL: Standartizatsiya, 1960, Nr 3, pp 53-56 (USSR)

ABSTRACT: Commemorating the 100th anniversary of the birth of Professor Aleksey Dmitriyevich Gattsuk, and the 30th anniversary of the approval of the All-Union system of tolerances and fits, in the development of which Gattsuk played a remarkable role, a scientific technical conference took place at the Leningradskiy tekhnologicheskiy institut im. Lensoveta (Leningrad Technological Institute imeni Lensovet) in December 1959. The conference was attended by more than 100 specialists from higher educational and scientific institutions, and from plants in Leningrad, Moscow, Gor'kiy, Zaporozh'ye, and Perm'. V.N. Gostev, Candidate of Technical Sciences, reported on Gattsuk's scientific activities. Professor B.D. Yashnov, Doctor of Technical Sciences, B.M. Deshevoy,

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A.K. Kutay, B.P. Berezin, all Candidates of Technical Sciences and R.B. Kholyavskaya and L.M. Sverdlov, Engineers, dealt with Gattsuk and his achievements. V.D. Nesterov, Engineer, from the Komitet standartov, mer i izmeritel'nykh priborov (Committee of Standards, Measures, and Measuring Instruments) spoke on the development of the tolerance and fit system in the post-war years, and its further perfectioning. A.K. Kutay, Candidate of Technical Sciences (Leningrad), elucidated some facts dealing with the rapprochement of the OST and ISO systems in socialist countries. Professor A.A. Zykov, Doctor of Technical Sciences (Gor'kiy), reported on the graphic-analytical method of calculating fits in group assembly. V.N. Gostev, Candidate of Technical Sciences (Leningrad) examined versions of calculation methods for the

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selection of tolerances and fits in design development. S.I. Bruk, Candidate of Technical Sciences (Leningrad), treated the problem of tolerances in curvilinear surfaces. A.S. Smirnov dealt with the problem of using preference numbers formed by geometric progression, to select dimension parameters when designing. M.S. Mirkin, Candidate of Technical Sciences, spoke on kinematic accuracy increase on account of the phase compensation of angle errors. Yu.N. Lyandon, Candidate of Technical Sciences (Moscow), treated problems of tolerance calculation in connection with functional interchangeability. N.B. Firun, Candidate of Technical Sciences, reported on new original method of checking the kinematic accuracy of tooth cutting machines. Ye.M. Dobrynin, Candidate of Technical Sciences, dealt with the problem of certifying the dynamic accuracies of devices. I.N. Taganov gave information on a new automatic installation for the current statistic checking of multi-dimension parts by applying

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A Conference on Problems of Accuracy in Machine Building

the grouping method. B.S. Balakshin (Moscow), Doctor of Technical Sciences, spoke on the utilization of the principles of the dimension chain theory in machine building. V.P. Puzanova, Candidate of Technical Sciences (Leningrad), treated problems of dimension analysis in connection with the determination of dimension chains. I.G. Fridlender, Candidate of Technical Sciences, dealt with methods of calculating tolerances for aeronautical gas turbine vanes, his report being based on the general accuracy theory developed by Academician N.G. Bruyevich. V.D. Zinevich, Candidate of Technical Sciences (Leningrad), reported on some peculiarities in the calculation of the dimension chains of machines produced by the Zavod "Pnevmatika" ("Pnevmatika" Plant). P.N. Goberman (Leningrad), reported on methods of teaching the "Fundamentals of Interchangeability and Technical

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Measurements" at vuzes. Engineer L.B. Bykhovskiy (Perm') reported on investigations carried out for the Committee of Standards, Measures, and Measuring Instruments to obtain data on the shape, dimensions, and tolerances for multiple trapezoidal thread. B.I. Livshits, Candidate of Technical Sciences (Leningrad) spoke on the accuracy of cams milling. Engineer V.A. Braginskiy (Leningrad) reported on investigations concerning accuracy problems in the production of parts made of plastics. On instructions of the Committee of Standards, Measures, and Measuring Instruments, the MVTU imeni Bauman and the LTI imeni Lensovet are studying the matter to provide data for accuracy standards. I.V. Dunin-Barkovskiy (Moscov), and I.A. Mishin (Leningrad), both Candidates of Technical Sciences, discussed separate problems of the microgeometry of machine part surfaces. The conference passed a resolution recommending the establishment of labora-

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tories for the study of accuracy and interchangeability problems at vuzes and large plants, and to introduce in the course of higher mathematics subjects satisfying modern requirements for the study of accuracy (theory of probability, statistical mathematics, theory of accidental functions, etc). The conference asked the Committee of Standards, Measures, and Measuring Instruments to consider the problem of tolerances for length dimensions and tolerances for the wear of the no-go side of rigid gauges. There is 1 diagram.

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BRAGINSKIY, V.A.

French standard draft for tolerances for plastic parts. Standartizatsiia 24 no.9:58-59 S '60. (MIRA 13:9)
(Plastics--Standards)

BRAGINSKIY, V.A., inzh.

Future belongs to electronic computers. Mashinostroitel' no.9:46 S '62. (MIRA 15:9)
(Electronic calculating machines)

VOROB'YEV, Yu.A., kand. tekhn. nauk, dots.; BRAGINSKIY, V.A., inzh.;

[Allowances and fits for plastic parts; technical directions RTM ML 1-62] Dopuski i posadki detalei iz plastmass; rukovodiashchie tekhnicheskie materialy RTM ML 1-62. Leningrad, TSentr. biuro tekhn. informatsii. Pt.1.[Precision of the manufacture of plastic parts by die casting and pressing (engineering allowances)] Tochnost' izgotovleniia detalei iz plastmass lit'em pod davleniem i pressovaniem (tekhnologicheskie dopuski). 1962. 88 p. (MIRA 16:12)

1. Moscow. Moskovskoye vysshoye tekhnicheskoye uchilishche. Kafedra metrologii i vzaimozamenyayemosti.

PROKOPENKO, A.G., inzh.; GORESHNIK, A.D., inzh.; TKACHUK, N.V., inzh.; BRAGINSKIY, V.A., inzh.; GALATSAN, V.N., inzh.; MAKHLIN, V.A., inzh.

Analysis of the start operation of warm 150 Mw. single-block units. Teploenergetika 10 no.8:2-10 Ag '63. (MIRA 16:8)

1. Yuzhnoye otdeleniye Gosudarstvennogo tresta po organizatsii i ratsionalizatsii rayonnykh elektrostantsiy i setey, Khar'kovskiy turbogeneratornyy zavod i Gosudarstvennoye upravleniye energeticheskogo khozyaystva Dnepropetrovskoy oblasti.
(Boilers) (Steam turbines)

BRAGINSKIY, Vladimir Abramovich; SELIVANOV, D.G., red.

[Shrinnkage and precision of plastic parts] Usadka i tochnost' detalei iz plastmass. Leningrad. Pt.1. [Shrinkage of plastic parts; verbatim record of a lecture] Usadka detalei iz plastmass; stenogramma lektsii. 1963. 42 p.
(MIRA 17:5)